

REMARKS/ARGUMENTS

The present Amendment is responsive to the Final Office Action mailed September 4, 2002 in the above-identified application. Enclosed herewith is a petition requesting a two month extension of time for resetting the deadline for responding to the Final Office Action from December 4, 2002 to and including February 4, 2003. Also enclosed herewith is a Notice of Appeal.

The Examiner objected to claims 1-25 because the term "braking" in claim 1 appears to be grammatically incorrect. In response, claim 1 has been amended to change the term "braking" to -- breaking --.

The Examiner rejected claims 1-25 under 35 U.S.C. § 112, second paragraph, as being indefinite. Specifically, the Examiner asserts that the term "frangible" in claims 1, 6-7, 15-16, 19 and 22-25 is a vague relative term of degree for which the disclosure provides no clear standard for measuring the degree. As asserted in earlier communications in the present application, Applicants respectfully note that the term "frangible" is used to describe a portion of a lead in dozens of issued U.S. patents. For example, claim 1 of U.S. Patent No. 6,274,822 discloses a method of making a semiconductor connection component including leads having "frangible" sections. Claim 11 of U.S. Patent No. 6,255,723 discloses a microelectronic lead element including a "frangible portion adjacent said bonding region." Claim 1 of U.S. Patent No. 6,218,213 discloses a method of making a "lead having a frangible intermediate section." In addition, the specification of the present application clearly defines the term "frangible." Beginning at page 44, lines 21, the specification clearly defines the dimensions and features of Applicants' claimed "frangible lead." Thus, the specification of the present application provides a clear standard for ascertaining the meaning of the term "frangible," and one of ordinary skill in the art would be reasonably apprised of the scope of the invention as required by the Manual of Patent Examining Procedure, § 706.03(b). Perhaps most importantly, Applicants respectfully note that the present application is a continuation of commonly assigned U.S. Patent No. 6,054,756 and that the Examiner of the present application allowed the '756 patent which includes the terms "frangible" in claims 1-3 and 9 thereof. For all of the above reasons, Applicants respectfully assert that claims 1, 6-7, 15-16, 19 and 22-25 satisfy the requirements of 35 U.S.C. § 112, second paragraph. As such, Applicants respectfully request that the Examiner's § 112, second paragraph, rejection be withdrawn.

The Examiner rejected claims 1, 4-16 and 20-22 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,380,042 to *Angelucci*. Referring to FIGS. 3 and 4 thereof, *Angelucci's* connecting frame 32 is not located on tape 20 but is attached to a semiconductor chip 28. Amended claim 1 is unanticipated by *Angelucci* because the cited reference neither discloses nor suggests a semiconductor chip mounting component including "a support structure adapted for engagement with a semiconductor chip having a top surface, a bottom surface, and a gap extending through said support structure [and] at least one elongated bus disposed alongside said gap, on said second portion of said support structure." *Angelucci* also neither discloses nor suggests "a plurality of electrically conducts leads, each said lead having a connection section extending across said gap, said connection section having a first end disposed on the first portion of the support structure, and a second end secured to said bus, and a frangible section, said gap being open at said bottom surface of said support structure, said leads being adapted to be bonded to contacts on a semiconductor chip disposed beneath said bottom surface by breaking the frangible sections of said leads so as to disconnect said second ends of said leads from the bus and engage the leads with the contacts of the chip." Thus, claim 1 is unanticipated by *Angelucci* and is otherwise allowable. Claims 4-6, 8-9, 15-16 and 20-22 are also unanticipated, *inter alia* by virtue their dependence from claim 1, which is unanticipated for the reasons set forth above.

Claim 10 is also unanticipated because *Angelucci* neither discloses nor suggests the component of claim 1 including "wherein the support structure includes a dielectric layer, said dielectric layer including first and second portions, said first portion of said support structure including said first portion of said dielectric layer, said second portion of said support structure including said second portion of said dielectric layer." Claim 10 is also unanticipated, *inter alia* by virtue of its dependence from claim 1, which is unanticipated for the reasons set forth above. Claims 11-14 are unanticipated by virtue of their dependence from claim 10.

The Examiner also rejected claims 1, 17-21 and 25 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 4,801,999 to *Hayward*. A review of the *Hayward* reference indicates that it simply does not teach or suggest the "frangible section" required by the limitations recited in claim 1. *Hayward* also does not disclose a mounting component with the "leads being adapted to be bonded to contacts on a semiconductor chip disposed beneath said bottom surface by breaking the frangible sections of said leads so as to disconnect said second ends of said leads from the bus and engage the leads with the contacts of the chip." For all these reasons, claim 1 is unanticipated by *Hayward* and is otherwise allowable. Claims 17-21 and 25

are also unanticipated, *inter alia*, by virtue of their dependence from claim 1, which is unanticipated for the reasons set forth above.

The Examiner rejected claims 1-3, 20-21 and 25 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,459,634 to *Nelson*. In response, Applicants assert that *Nelson* does not teach "a plurality of electrically conductive leads [having] a frangible section...said leads being adapted to be bonded to contacts on a semiconductor chip disposed beneath said bottom surface by breaking the frangible sections of said leads so as to disconnect said bottom ends of said leads from the bus and engage the leads with the contacts of the chip." *Nelson's* leads simply do not include a "frangible section," nor is any frangible section contemplated by *Nelson*. Thus, claim 1 is unanticipated by *Nelson* and is otherwise allowable. Claims 2-3, 20-21 and 25 are also unanticipated, *inter alia*, by virtue of their dependence from claim 1 which is unanticipated for the reasons set forth above.

The Examiner also rejected claims 1 and 20-25 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,550,406 to *McCormick*. At column 12, lines 47-52 thereof, *McCormick* teaches that its leads are "broken and bent downward passed the polyimide layer 320 to contact a second conductive plane." (See FIG. 3A). *McCormick*, however, provides no teaching or suggestion that its leads include a "frangible section" as disclosed in Applicants' specification (see FIG. 24) or that the "frangible section" is "adapted to be bonded to contacts on a semiconductor chip disposed beneath said bottom surface by breaking the frangible sections of said leads so as to disconnect said second ends of said leads from the bus and engage the leads with the contacts of the chip." For all of these reasons, claim 1 is unanticipated by *McCormick* and is otherwise allowable. Claims 20-25 are also unanticipated, *inter alia*, by virtue of their dependence from claim 1, which is unanticipated for the reasons set forth above.

Applicants have also added new claim 26 which recites a component including "terminals disposed on said first portion of said support structure, at least some of said leads having their first end connected to said terminals." Support for new claim 26 is found in the specification at page 46, line 14 - page 48, line 20. New claim 26 is patentable over the prior art of record because the prior art neither discloses nor suggests the limitations recited therein. New claim 26 is also patentable by virtue of its dependence from claim 1, which is patentable for the reasons set forth above.

Applicants have also introduced new claim 27 which essentially combines the limitations of claims 1 and 22, as well as new claim 26. New claim 27 is patentable for the

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reasons set forth above with respect to claims 1, 22 and 26.

As it is believed that all of the rejections, objections and requirements set forth in the Final Office Action have been fully met, favorable reconsideration and allowance are earnestly solicited.

Applicants' attorneys respectfully request that the Examiner contact the undersigned to schedule a telephone interview of the present application.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned **"Version with markings to show changes made."**

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Dated: February 3, 2003

Respectfully submitted,

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Version With Markings to Show Changes Made

1. (Thrice Amended) A semiconductor chip mounting component comprising:

(a) a support structure adapted for engagement with a semiconductor chip having a top surface, a bottom surface, and a gap extending through said support structure between said surfaces ~~for~~ and defining first and second portions of said support structure on opposite sides of the gap;

(b) at least one elongated bus disposed alongside said gap, on said second portion of said support structure; and

(bc) a plurality of electrically conductive leads, each said lead having a connection section extending across said gap, said connection section having a first end disposed on the first portion of the support structure on one side of the gap, and a second end secured to said bus support structure on an opposite side of said gap, and a frangible section; (c) at least one elongated bus disposed alongside said gap, on one of said first and second portions of said support structure, wherein each of said leads extends across said gap and is connected to the bus and wherein, said gap being open at said bottom surface of said support structure, said leads are being adapted to be bonded to contacts on a semiconductor chip disposed beneath said bottom surface by breaking the frangible sections of said leads so as to disconnect said second ends of said leads from the bus and engage the leads with the contacts of the chip.

10. (Amended) The component of claim 1, wherein the support structure includes a dielectric layer, said dielectric layer including first and second portions, said first portion of said support structure including said first portion of said dielectric layer, said second portion of said support structure including said second portion of said dielectric layer.

13. (Amended) The component of claim 11, wherein the support structure includes a ~~said~~ dielectric layer defining a said top surface of said support structure and said compliant layer defining said a bottom surface of said support structure.

17. (Thrice Amended) A component as claimed in claim 1, wherein said ~~support structure includes the first and second portions, gap includes~~ ing a plurality of elongated slots extending substantially around said first portion so that the slots are disposed between the first portion and the second portion, the component including a plurality of said elongated buses arranged on said second portion so that one such bus extends alongside each said slot.

19. (Thrice Amended) The component as claimed in claim 18, wherein said slots are connected to one another to form a substantially continuous channel surrounding said first portion, said first portion being connected to said second portion only through said leads, whereby said first portion will be detached from said second portion upon breakage of said frangible sections.

20. (Amended) The component of claim 1, wherein said first and second portions of said support structure comprises a unitary support.

25. (Amended) The component of claim 1, wherein ~~said first and second ends of said connection section are joined together by~~ said frangible sections overlying ~~overlie~~ said gap, at least one of said first and second ends of each said connection section is displaceable within said gap relative to said support structure upon severing said frangible section while leaving a remainder of said connection section intact.

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ABSTRACT OF THE DISCLOSURE

A semiconductor chip mounting component includes a support structure adapted for engagement with a semiconductor chip having a top surface, a bottom surface and a gap extending through the support structure between the surfaces and defining first and second portions of the support structure on opposite sides of the gap. The semiconductor chip mounting component also includes at least one elongated bus disposed alongside the gap, on the second portion of the support structure, and a plurality of electrically conductive leads, each lead having a connection section extending across the gap, the connection section having a first end disposed on the first portion of the support structure and a second end secured to the bus, and a frangible section. The gap is open at the bottom surface of the support structure, and the leads are adapted to be bonded to contacts on a semiconductor chip disposed beneath the bottom surface by breaking the frangible sections of the leads so as to disconnect the second ends of the leads from the bus and engage the leads with the contacts of the chip.